

# PATENT ABSTRACTS OF JAPAN

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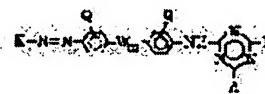
SAIKI MUTSUHIKO

## (54) PIGMENT DISPERSANT

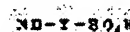
### (57)Abstract:

**PURPOSE:** To obtain a pigment dispersant which gives a hardly aggregating dispersion by reacting 3, 3'-dichlorobenzidine with cyanuric chloride and then with sulfanilic acid and diazotizing and coupling the resulting product.

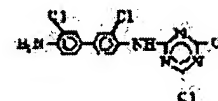
**CONSTITUTION:** This dispersant is a compd. represented by formula 1 or its metal, ammonium, or amine salt. In formula I, Q is H, halogen, lower alkyl, etc.; W is -CH<sub>2</sub>-, -O-, -S-, etc.; m is 0 or 1; K is a coupler residue of an azo pigment; and A and B are each hydroxyl or a group of formula II (wherein Y is an ethylene group, etc.). The dispersant is prepd., e.g., by reacting an amino group of 3,3'-dichlorobenzidine with cyanuric chloride, reacting the resulting compd. represented by formula III with sulfanilic acid, diazotizing the resulting compd. represented by formula IV, and coupling the resulting compd. with acetoaceto-2,5-dimethoxy-4-chloroanilide.



I



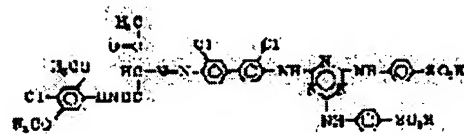
II



III



IV



V

## LEGAL STATUS

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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the pigment agent which offers the pigment dispersing element excellent in cohesionless.

[0002]

[Description of the Prior Art] Generally therefore, a pigment produces phenomena which are not desirable as for various kinds, such as fluid aggravation, color separation at the time of mixing with other pigments, or a fall of painted-surface gloss, in many cases in the condensation produced when it distributes in a coating or the vehicle of ink.

[0003] As an approach of improving the defect of such a pigment, the surface treatment approach of the pigment by the surfactant, metal soap, various resin, etc., use of various kinds of derivatives of an organic pigment, etc. are proposed.

[0004] For example, by the derivative of dysazo yellow, and JP,3-9957,A, use of the derivative of JIARIRIDO / JISUAZOHIRAZORON pigment is reported to USP3,296,001 by the approach of processing a copper phthalocyanine blue with the calcium salt of rosin, the method of processing litholrubin with the metal salt of a dialkyl sulfo succinic acid USP3,582,380, the method of processing Phthalocyanine Green with aromatic polyester in USP4,391,648, and USP3,275,637 the derivative of a quinacridone pigment, and USP3,532,520.

[0005] However, the actual condition is that what may still be satisfied fully in the effectiveness of giving cohesionless, in ink and a coating is not obtained to an azo system pigment.

[0006]

[Problem(s) to be Solved by the Invention] This invention offers the pigment agent which gives a remarkable improvement effect to coherent [ in the inside of the nonaqueous vehicle of an azo system pigment ].

[0007]

[Means for Solving the Problem] this invention person etc. is what succeeded research in development of the practically very useful pigment agent which solves a \*\*\*\*\* result and the above-mentioned trouble wholeheartedly, and this invention is a pigment agent which is the compound expressed with the following general formula [I] and [-izing 1], its metal salt, its ammonium, or an amine salt.

[Formula 1] A hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, or a hydroxyl group is shown by the inside Q of [type. W shows either of the radicals shown by [-izing 2], and m shows the integer of 0 or 1.

[Formula 2] K shows the coupler component residue for azo system pigments. A and B show a hydroxyl group or the radical shown by [-izing 3].

[Formula 3] \*\*\*\*\* of Y is also good at ethylene, a phenylene group, or a naphthylene radical including a \*\*\*\*\* substituent. However, A and B are independent respectively and at least one side is a radical shown by [-izing 4].

[Formula 4] ]

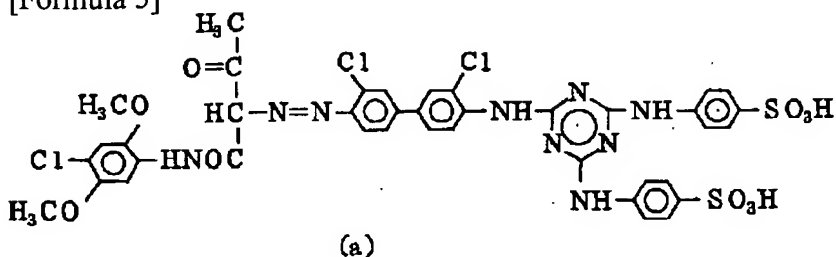
[0008] As a typical amine component for which Y has one \*\*\*\*\* sulfone radical by ethylene, the phenylene group, and the naphthylene radical A taurine, a sulfanilic acid, a metanilic acid, an alt. nil acid, a naphthionic acid, Tobias acid, a 2-aminophenol-4-sulfonic acid, a 2-methoxyaniline-5-sulfonic acid, A 4-KURORU aniline-3-sulfonic acid, a 2-nitroaniline-4-sulfonic acid, 4B-acid (para toluidine-m-sulfonic acid), 2B-acid (o-chloro-para toluidine-m-sulfonic acid), C acid (3-amino-6-chloro toluene-4-sulfonic acid), CB acid (3-amino-6-chloro benzoic-acid-4-sulfonic acid), a gamma acid (2-amino-8-naphthol-6-sulfonic acid), etc. are raised.

[0009] As an amine of the amine salt of the compound shown by the general formula [I], a stearyl amine, DEHIDOROLON ethylamine, etc. are raised, for example. Moreover, Ba, calcium, Sr, Mn, aluminum, etc. are raised as a metal of a metal salt.

[0010] Two approaches shown by following 1 and 2 for preparing the pigment agent of this invention are typical. The

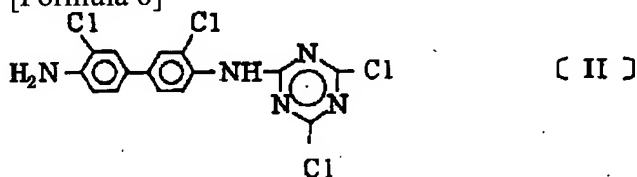
outline of the method of preparation is shown by making (pigment agent a) [-ized 5] into an example.

[Formula 5]



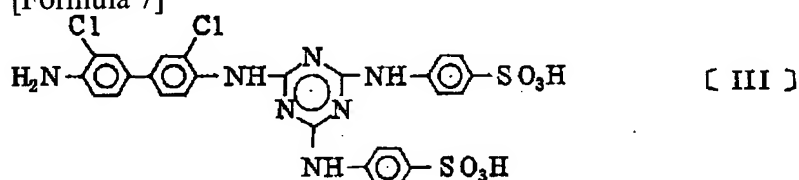
[0011] 1) If one amino group and cyanuric chloride of 3,3'-dichlorobenzidine are made to react first, the compound [II] shown by [-izing 6] will be obtained.

[Formula 6]



[0012] Next, if a compound [II] and a sulfanilic acid are made to react, the compound [III] (base) shown by [-izing 7] will be obtained.

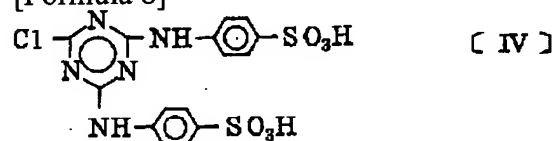
[Formula 7]



[0013] Next, if a compound [III] is diazotized with a conventional method and coupling is carried out to aceto aceto -2 and a 5-JIMETO oxy--4-chloro anilide, a pigment agent (a) will be obtained.

[0014] 2) If cyanuric chloride and a sulfanilic acid are made to react first, the compound [IV] shown by [-izing 8] will be obtained.

[Formula 8]



[0015] A compound [III] will be obtained if a compound [IV] and 3,3'-dichlorobenzidine are made to react. Next, if a compound [III] is diazotized with a conventional method and coupling is carried out to aceto aceto -2 and a 5-JIMETO oxy--4-chloro anilide, a pigment agent (a) will be obtained. Moreover, various methods of preparation also besides 1 and 2 having shown are possible.

[0016]

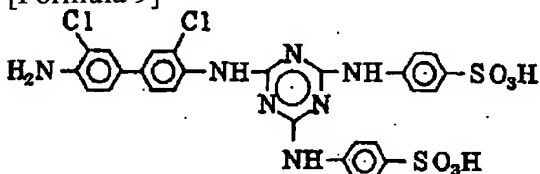
[Function] The pigment agent of this invention demonstrates the dispersion effect excellent in the azo system pigment at large [ commercial ]. The same or the case where it is used for the azo system pigment which has the coupling component of similar structure demonstrates effectiveness most especially. It is desirable to carry out 0.5-30 weight section combination of the pigment agent of this invention to the azo system pigment 100 weight section. The effectiveness of only that is not acquired, even if the target effectiveness will not be acquired and it will use mostly from 30 weight sections, if fewer than the 0.5 weight section.

[0017] Although fine-particles combination is carried out and a pigment agent and a pigment are usually used as operation of the pigment agent of this invention, you may add to a nonaqueous vehicle with a pigment. Moreover, it can also blend and use beforehand at the time of preparation of the pigment itself.

[0018] For example, benzidine system JISUAZO Yellow It can also blend directly by the synthetic system, without using a compound [III] (base) together as some bases at the time of composition of a pigment, performing a coupling reaction after tetraazotization (the concomitant use base being diazotized) as a conventional method, and performing

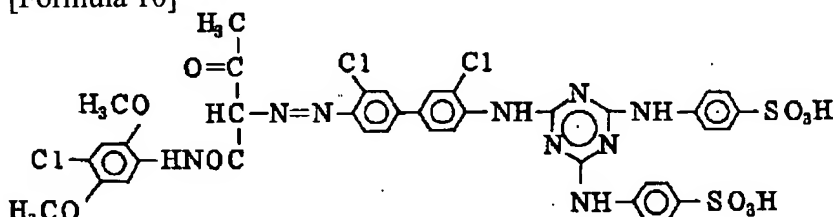
fine-particles combination. the above -- the effectiveness therefore made into \*\*\*\*\* at which approach is acquired.  
 [0019] The pigment agent of this invention is not limited only to nonaqueous vehicles, such as ink and a coating, but is applicable also to coloring of plastics. The outline of the synthesis method of the pigment agent of this invention is described as an example of manufacture below. The weight section is indicated to be the "section" among an example.  
 [0020] The 3,3'-dichlorobenzidine 10 section is added to the example of manufacture 1 water 100 section, and it is distributed, one amino group and the cyanuric chloride 7.3 section of an amount which reacts are added, and it is made to react at 20 degrees C for 1 hour. Next, the amine 26.6 section which adds the sulfanilic acid of the 13.7 sections, is made to react at 90 degrees C for 1 hour, and has the structure of [-izing 9] is obtained.

[Formula 9]



[0021] the base 25.0 above-mentioned section -- a conventional method -- therefore, it diazotized and the (pigment agent a) 35.5 section which therefore has the structure of [-izing 10] to carry out a coupling reaction to aceto aceto -2 and the 5-JIMETO oxy--4-chloro anilide 10.1 section was obtained.

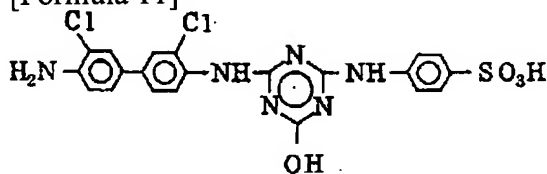
[Formula 10]



(a)

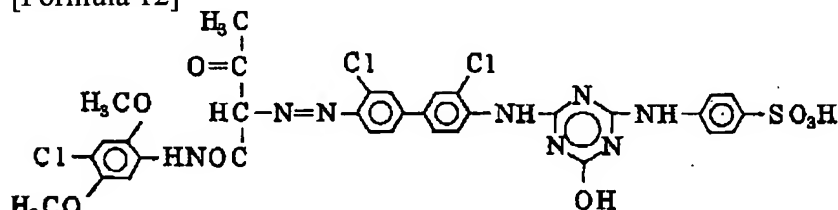
[0022] The cyanuric chloride 7.3 section, one Cl of cyanuric chloride, and the sulfanilic-acid 6.8 section of an amount that reacts are added to the example of manufacture 2 water 100 section, and it is made to react at 20 degrees C for 1 hour. Next, one Cl of this reactant and the 3,3'-dichlorobenzidine 10 section of an amount which reacts are added, and it is made to react at 90 degrees C for 1 hour. And the one remaining Cl obtains the amine 20.5 section which has the structure of the hydrolyzed [-izing 11].

[Formula 11]



[0023] the base 20.0 above-mentioned section -- a conventional method -- therefore, it diazotized and the (pigment agent b) 30.9 section which therefore has the structure of [-izing 12] to carry out a coupling reaction to aceto aceto -2 and the 5-JIMETO oxy--4-chloro anilide 10.5 section was obtained.

[Formula 12]



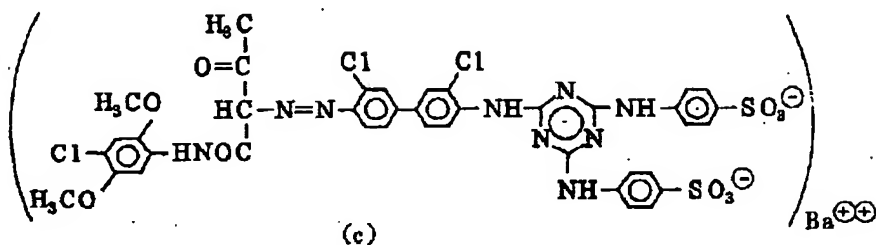
(b)

[0024] It completely carries out similarly until it carries out a coupling reaction in the example 1 of example of manufacture 3 manufacture, and it is a coupling reaction.

後、NaOH水溶液でpH≒10.5に調整した後、45℃でBaCl<sub>2</sub>水溶液

The (pigment agent c) 40.5 section which has the structure of the [-izing 13] which was boiled and was lake-ized more by Ba was obtained.

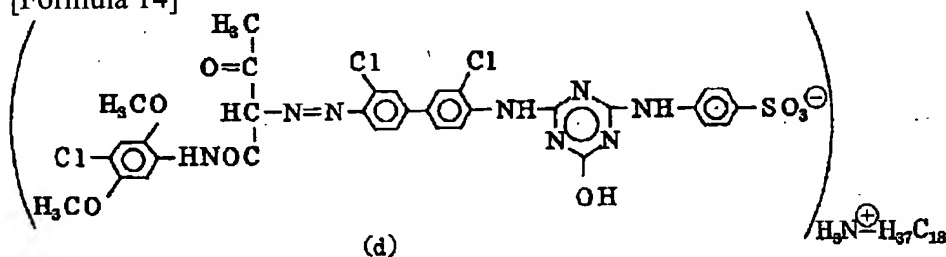
[Formula 13]



[0025] A coupling reaction is performed completely similarly in the example 2 of example of manufacture 4 manufacture, and it is after a coupling reaction, ステアリルアミン酢酸水溶液を添加し、最終、NaOH水溶液でpH≒10.5

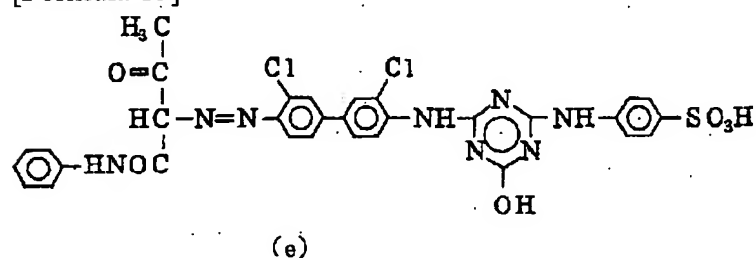
After it was alike and adjusting, it filtered and rinsed and the (pigment agent d) 37.4 section which has the structure of the [-izing 14] taken out as a stearyl amine salt was obtained.

[Formula 14]

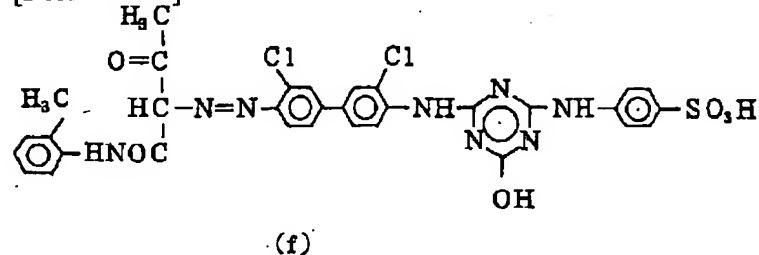


[0026] The amine of the example 2 of example of manufacture 5 manufacture is used, it completely supposes that it is the same until it diazotizes, and it is a coupler. [pigment agent [ which has the structure of-izing 15]- [-izing 20] ] (e) - (j) was obtained by repeating the procedure of the example 2 of manufacture except having used acetoacetanilide, aceto aceto-o-toluidide, aceto aceto-o-ANISHIJIDO, 5-aceto acetylamino bends imidazolone, 1-phenyl-3-methyl-5-pyrazolone, and a 1-(p-tolyl)-3-methyl-5-pyrazolone, respectively.

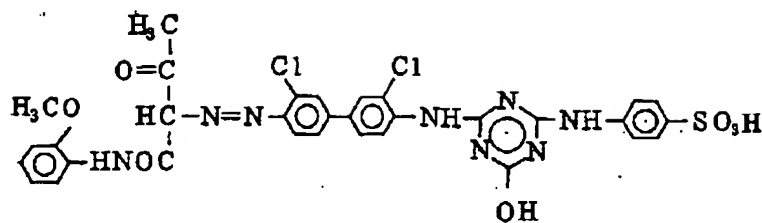
[Formula 15]



[Formula 16]

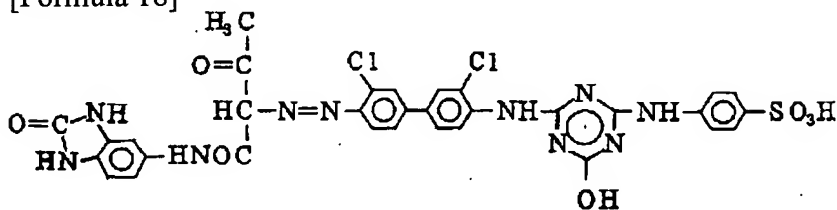


[Formula 17]



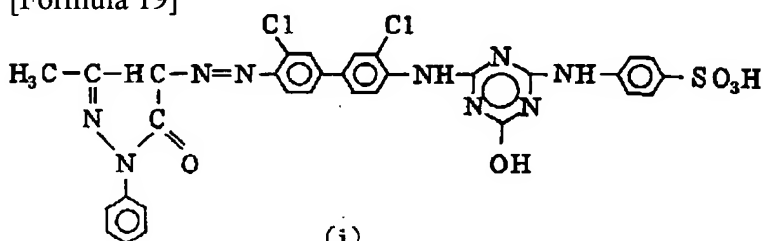
(g)

[Formula 18]



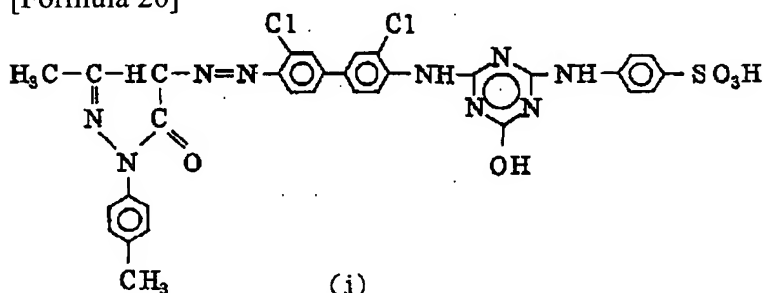
(h)

[Formula 19]



(i)

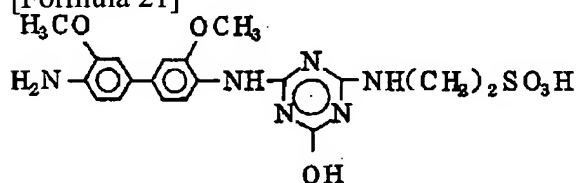
[Formula 20]



(j)

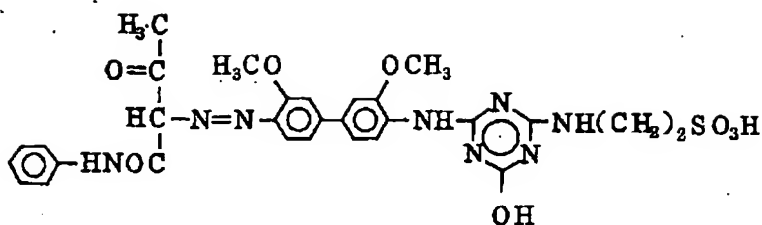
[0027] The o-dianisidine 10 section is added to the example of manufacture 6 water 100 section, and it is distributed, one amino group and the cyanuric chloride 7.6 section of an amount which reacts are added, and it is made to react at 30 degrees C for 1 hour. Next, the amine 18.9 section which adds the taurine of the 5.1 sections, is made to react at 80 degrees C for 1 hour, and has the structure of [-ized 21] is obtained.

[Formula 21]



[0028] the base 18.0 above-mentioned section -- a conventional method -- therefore, it diazotized and the pigment agent [k25.0 section which therefore has the structure of [-ized 22] to carry out a coupling reaction to the acetoacetanilide 6.9 section was obtained.

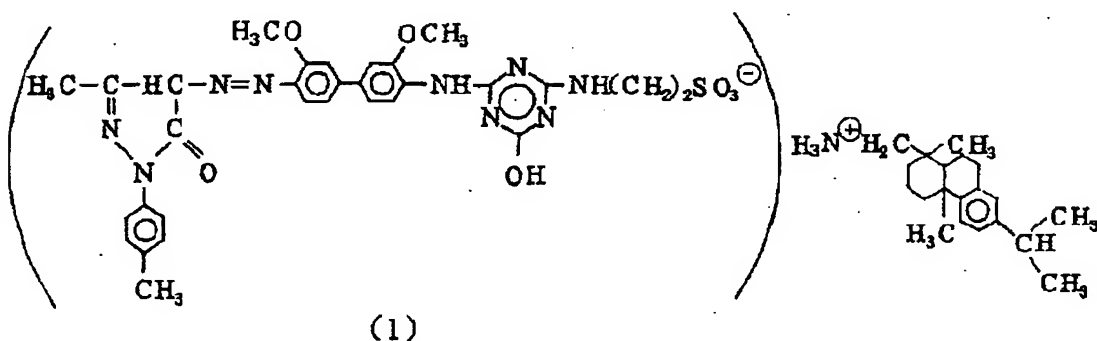
[Formula 22]



(k)

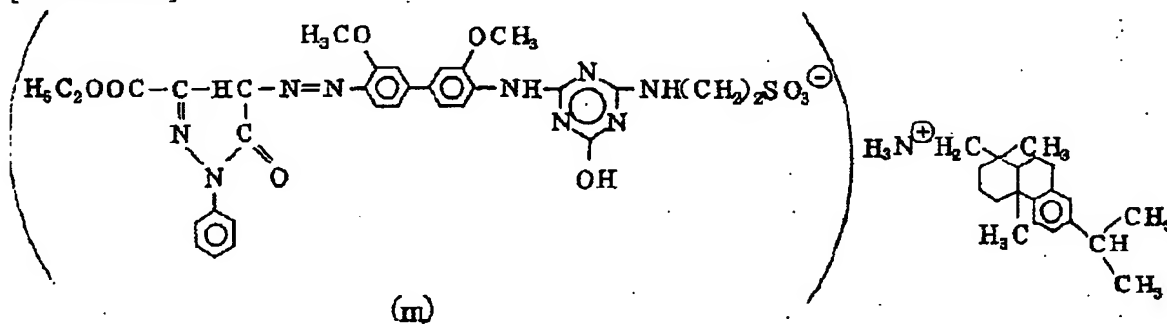
[0029] The amine of the example 6 of example of manufacture 7 manufacture was used, and after carrying out a coupling reaction, using a 1-(p-tolyl)-3-methyl-5-pyrazolone and a 1-phenyl-3-KARUBO ethoxy-5-pyrazolone as a coupler, the pigment agent (1) and (m) which therefore have the structure of [-izing 23] and [-izing 24] to consider as an amine salt by DEHIDORO loon ethylamine were completely similarly obtained, until it diazotized.

[Formula 23]



(1)

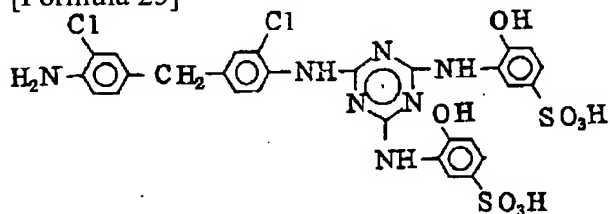
[Formula 24]



(m)

[0030] The 4,4'-methylenebis (2-chloroaniline) 10 section is added to the example of manufacture 8 water 100 section, and it is distributed, one amino group and the cyanuric chloride 6.9 section of an amount which reacts are added, and it is made to react at 20 degrees C for 2 hours. Next, the amine 26.4 section which adds the 2-aminophenol-4-sulfonic acid of the 14.2 sections, is made to react at 90 degrees C for 1 hour, and has the structure of [-izing 25] is obtained.

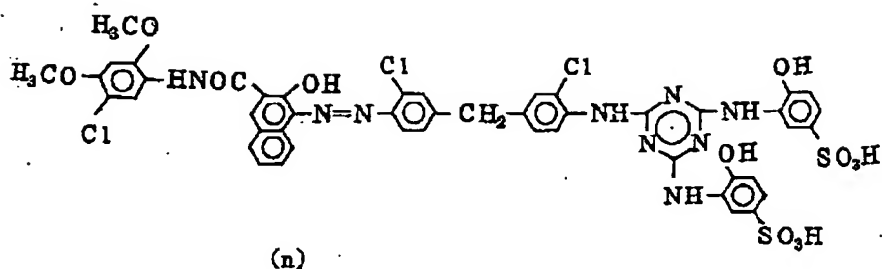
[Formula 25]



[0031] the base 25.0 above-mentioned section -- a conventional method -- therefore, it diazotized and the (pigment agent n) 36.3 section which therefore has the structure of [-ized 26] to carry out a coupling reaction to the Naphthol AS-ITR12.4 section was obtained.

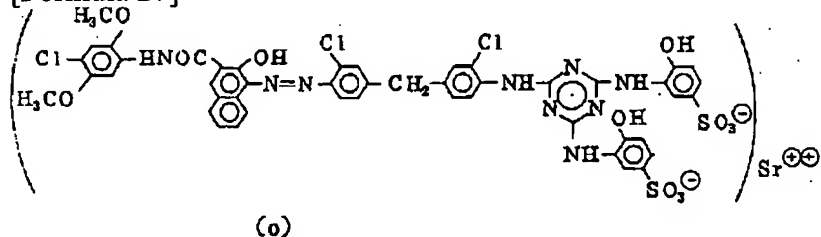
[Formula 26]



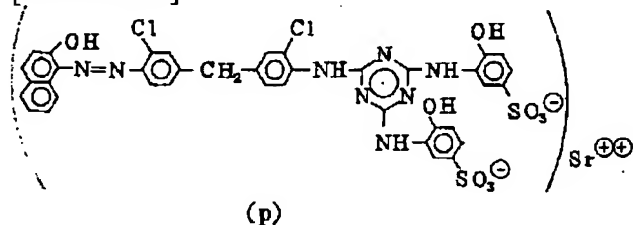


[0032] The amine of the example 8 of example of manufacture 9 manufacture was used, and after completely presupposing that it is the same and carrying out a coupling reaction, using Naphthol AS-LC and the beta-naphthol as a coupler until it diazotized, the pigment agent (o) and (p) which therefore have the structure of [-izing 27] and [-izing 28] to lake-ize by  $\text{Sr}[\text{NO}_3]_2$  were obtained.

[Formula 27]

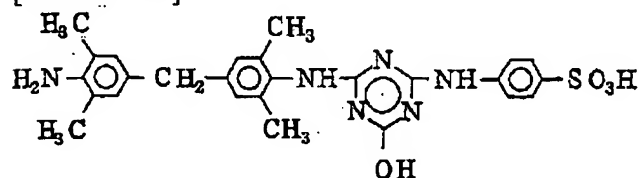


[Formula 28]



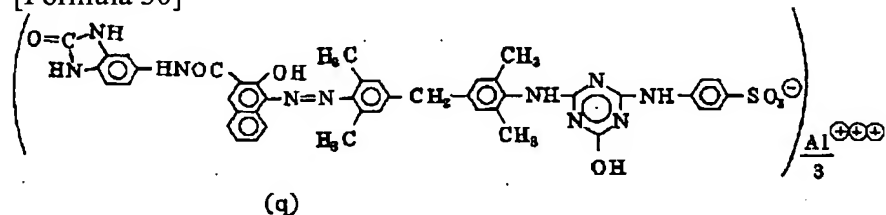
[0033] The cyanuric chloride 7.3 section, one Cl of cyanuric chloride, and the sulfanilic-acid 6.8 section of an amount that reacts are added to the example of manufacture 10 water 100 section, and it is made to react at 20 degrees C for 1 hour. Next, one Cl of this reactant, 4 of an amount which reacts and 4'-MECHIRENJI -2, and the 6-xylylene 10 section are added, and it is made to react at 90 degrees C for 2 hours. And the one remaining Cl obtains the amine 20.5 section which has the structure of the hydrolyzed [-izing 29].

[Formula 29]



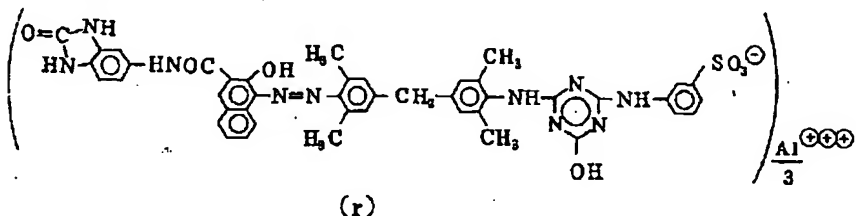
[0034] the base 20.0 above-mentioned section -- a conventional method -- after diazotizing and carrying out a coupling reaction to the 5-(2-hydroxy-3-naphthoyl amino)-bends imidazolone 12.5 section, therefore, the (pigment agent q) of structure of [-izing 30] 33.2 section was obtained by lake-izing by aluminum $2(\text{SO}_4)_3$ .

[Formula 30]

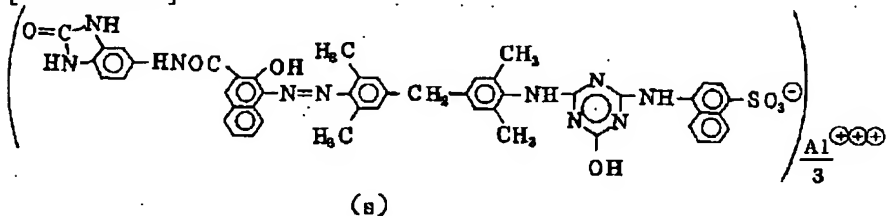


[0035] The metanilic acid and the naphthionic acid were used instead of the sulfanilic acid in the example 10 of example of manufacture 11 manufacture, and pigment agent [r] which has the structure of [-izing 31] and [-izing 32] was obtained by completely repeating the same procedure except it.

[Formula 31]

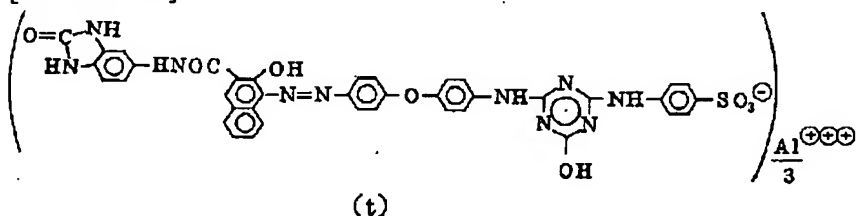


[Formula 32]

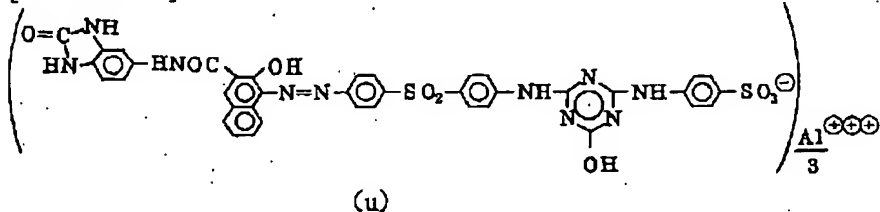


[0036] Therefore, [pigment agent [ which has the structure of -izing 33]- [-izing 35] ] (t) - (v) was obtained to completely repeat the same procedure except having used 4 and 4'-diamino phenyl ether, 4, and 4'-diamino phenyl sulfone, 1, and 4-Bis[4-amino phenoxy benzene instead of 4 and 4'-MECHIRENJI -2 and 6-xylylene in the example 10 of example of manufacture 12 manufacture.

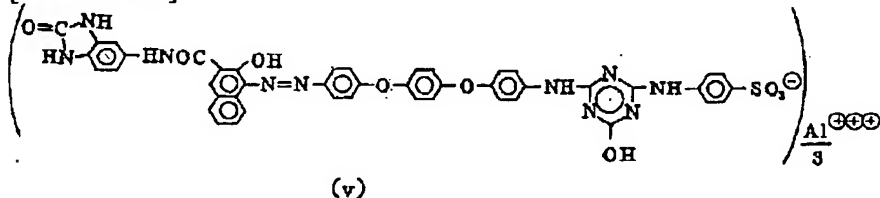
[Formula 33]



[Formula 34]



[Formula 35]



[0037] the structure which pigment agent [ in the example of manufacture ] (a) - (v) makes the purpose -- intermediary \*\*\*\* -- the check of things -- an elemental-analysis method -- \*\*\*\*\*. Performing elemental analysis about C, H, N, Cl, and S, for C, H, and N, automated analytical method, and Cl and S are \*\*\*\*\* by the column chromatography method of a flask combustion method.

[0038] Next, a pigment agent (a) and the elemental-analysis result about an empirical formula (C<sub>39</sub>H<sub>32</sub>N<sub>9</sub>O<sub>10</sub>Cl<sub>3</sub>S<sub>2</sub>) are shown.

	C(%)	H(%)	N(%)	O(%)	Cl(%)	S(%)	合計(%)
理論値	48.9	3.3	13.2	16.7	11.1	6.7	99.9
分析値	48.5	3.4	13.4	※16.7	11.3	6.9	100.2

※ Oについては理論値の値を記入した。

[0039] It checked that the value almost near a theoretical value was acquired from this analysis result about both C, H N Cl and S, and the compound of the structure made into the purpose was obtained. Moreover, elemental analysis of C, H, N, Cl, and S was similarly performed about pigment agent [ other than (a) ] (b) - (v), and it checked that the compound of the structure mostly made into the purpose, respectively was obtained.

[0040] Next, although an example and the example of a comparison are given and the effectiveness is described, weight criteria show the section and the percentage in an example. In addition, the chemical structure of each pigment agent shown with the alphabet corresponds with what was displayed on the example of manufacture. Moreover, the pigment agent shown by front Naka [ ] shows the pigment agent manufactured by the coupler of the same structure as the used pigment.

[0041]

[An example, the example of a comparison]

To glassware with example 1 capacity of 150ml C.I.Pigment Yellow 83 The 9.0 sections Pigment agent (a) The 1.0 sections Urethane varnish for gravures The 45.0 sections Thinner (toluene / IPA/MEK 45.0 section =40/20/40) Alumina bead (diameter of 3mm) 100 The section was put in and the paint conditioner was made to distribute for 60 minutes. The obtained ink was separated from the alumina bead and the gloss after viscosity and drawdown was measured. The result showed the property which was excellent as shown in Table 1.

[0042] A pigment agent (a) is not added in example of comparison 1 example 1, but it is Pigment. Yellow The ink which made 83 the 10.0 sections was created. The result is \*\*\*\*\* from an example 1, as shown in Table 1.

[0043] two to example 8 example 1 -- setting -- instead of [ of a pigment agent (a) ] -- a pigment agent (b), (c), [d, (e), (f), (g), and (h) -- respectively -- \*\*\*\* for the 1.0 sections -- things -- except created the ink of each intermediary \*\*\*\* as it is for the example 1. The result is shown in Table 1.

[0044] It is Pigment at the example 2 of a comparison - the example 1 of 17 comparisons. Yellow It is PigmentYellow instead of 83. 12, 14, 17, 139, Pigment Orange 13, 34, Pigment Yellow 97, 74, 151, Pigment Red 37, 38, 5, 146, and 3,208 were made into the ten sections, respectively, and the ink which does not add a pigment agent was created. The result is shown in Table 1.

[0045] It is Pigment at nine to example 48 example 1. Yellow The pigment of the examples 2-17 of a comparison was used instead of 83, and the ink which also combined the pigment agent variously to (a) in example of manufacture - (v) was created. The result is shown in Table 1.

[Table 1]

グラビア用ウレタンインキの粘度、光沢

	顔 料	顔料 分散剤	粘 度 cps			光沢 (%)
			30rpm	60rpm	30/60比	
比較例 1	C. I. ピグメントエロー 83	—	4380	2670	1.64	68.5
実施例 1	"	[a]	117	113	1.04	87.2
" 2	"	[b]	94	92	1.02	88.6
" 3	"	[c]	102	101	1.01	85.2
" 4	"	[d]	118	115	1.03	90.6
" 5	"	e	738	516	1.43	77.4
" 6	"	f	764	527	1.45	76.3
" 7	"	g	345	261	1.32	78.8
" 8	"	h	1045	692	1.51	74.1
比較例 2	C. I. ピグメントエロー 12	—	1522	976	1.56	64.3
実施例 9	"	[e]	104	103	1.01	80.6
" 10	"	b	658	487	1.35	68.9
" 11	"	f	126	121	1.04	76.5
比較例 3	C. I. ピグメントエロー 14	—	1368	864	1.58	65.7
実施例 12	"	[f]	106	104	1.02	83.2
" 13	"	b	808	573	1.41	72.8
" 14	"	e	128	124	1.03	81.4
比較例 4	C. I. ピグメントエロー 17	—	5640	3400	1.66	71.8
実施例 15	"	[g]	128	126	1.02	89.3
" 16	"	b	863	595	1.45	79.9
" 17	"	e	386	284	1.36	80.6
" 18	"	h	1074	726	1.48	75.4
比較例 5	C. I. ピグメントエロー 139	—	1820	1060	1.72	71.6
実施例 19	"	h	356	312	1.14	85.1
" 20	"	b	808	534	1.51	77.8

表 1 つづき

	顔 料	顔料 分散剤	粘 度 cps			光沢 (%)
			30rpm	60rpm	30/60比	
比較例 6	C. I. ピグメントオレンジ 13	—	886	595	1.49	64.5
実施例 21	“	[i]	90	88	1.02	81.2
“ 22	“	j	168	154	1.09	79.0
比較例 7	C. I. ピグメントオレンジ 34	—	1640	1045	1.57	68.3
実施例 23	“	[j]	108	107	1.01	84.6
“ 24	“	i	184	160	1.15	77.2
比較例 8	C. I. ピグメントエロー 97	—	2140	1320	1.62	74.1
実施例 25	“	[b]	120	118	1.02	86.3
比較例 9	C. I. ピグメントエロー 74	—	2080	1300	1.60	58.8
実施例 26	“	[g]	116	115	1.01	76.7
比較例 10	C. I. ピグメントエロー 151	—	862	607	1.42	72.0
実施例 27	“	[h]	97	97	1.00	83.4
比較例 11	C. I. ピグメントオレンジ 16	—	3360	2020	1.66	56.7
実施例 28	“	[k]	108	103	1.05	84.0
比較例 12	C. I. ピグメントレッド 37	—	3080	1880	1.64	64.6
実施例 29	“	[l]	150	134	1.12	78.3
“ 30	“	m	324	253	1.28	69.8
比較例 13	C. I. ピグメントレッド 38	—	3240	1930	1.68	59.6
実施例 31	“	[m]	106	104	1.02	80.1
“ 32	“	l	264	216	1.22	73.8
比較例 14	C. I. ピグメントレッド 5	—	2460	1447	1.70	63.3
実施例 33	“	[n]	106	106	1.00	82.1
“ 34	“	o	224	167	1.34	78.8
“ 35	“	p	208	159	1.31	77.4
“ 36	“	q	758	516	1.47	70.2
比較例 15	C. I. ピグメントレッド 146	—	1012	680	1.49	63.4

表 1 つづき

	顔 料	顔料 分散剤	粘 度 cps			光沢 (%)
			30rpm	60rpm	30/60比	
実施例 37	C. I. ピグメントレッド 146	[o]	94	94	1.00	84.0
“ 38	“	n	383	278	1.38	80.2
“ 39	“	q	591	405	1.46	75.6
比較例 16	C. I. ピグメントレッド 3	—	1046	671	1.56	43.8
実施例 40	“	[p]	136	124	1.10	78.0
比較例 17	C. I. ピグメントレッド 208	—	1804	1074	1.68	74.6
実施例 41	“	[q]	91	89	1.02	84.8
“ 42	“	n	852	552	1.54	78.2
“ 43	“	o	580	400	1.45	79.1
“ 44	“	[r]	98	98	1.00	85.3
“ 45	“	[s]	110	109	1.01	85.0
“ 46	“	[t]	105	103	1.02	84.0
“ 47	“	[u]	94	92	1.02	84.6
“ 48	“	[v]	116	113	1.03	82.8

[0046] Note The effectiveness viscosity excelled [ effectiveness ] in the Brook FIRUDO mold viscometer most when

measurement gloss blended 60 degrees / 60-degree reflection factor with a pigment with the structure of a coupler same especially in \*\*\*\*\*, although effectiveness was accepted when [ all ] a pigment agent was added, as shown in the measurement table 1 was accepted. Moreover, even if it measures these ink with the viscometer same after one-week neglect, most increments in viscosity are accepted, and it is inside \*\*\*\*.

[0047] It is Pigment to the acrylic copolymer 10 section and the cyclohexanone 74.9 section which consist of 50 % of the weight of example 49 n-butyl methacrylates, 30 % of the weight of butyl methacrylate, and 20 % of the weight of methacrylate. Yellow 83 Put the 14.3 sections and the (pigment agent b) 0.8 section into the container, the ball mill was made to fully distribute, and the yellow constituent for color filters was created. The result of having measured the fluidity of this constituent and the gloss of a drawdown object is shown in Table 2.

[0048] A pigment agent (b) is not added in example of comparison 18 example 49, but it is Pigment. Yellow The yellow constituent which made 83 the 15.1 sections was created. The result of having measured the fluidity of this constituent and the gloss of a drawdown object is shown in Table 2. The measuring method of [viscosity and gloss is \*\*\*\*\* like the case of the urethane ink for gravures.

[0049] It is Pigment at example 50 example 49. Yellow 83 It is Pigment instead of the 14.3 sections and the (pigment agent b) 0.8 section. Yellow 139 The yellow constituent for color filters made into the 14.3 sections and the (pigment agent h) 0.8 section was created. The result of having measured the fluidity of this constituent and the gloss of a drawdown object is shown in Table 2.

[0050] A pigment agent (h) is not added in example of comparison 19 example 50, but it is Pigment. Yellow 139 The yellow constituent made into the 15.1 sections was created. The result of having measured the fluidity of this constituent and the gloss of a drawdown object is shown in Table 2.

[0051] It is Pigment at example 51 example 49. Yellow 83 It is Pigment instead of the 14.3 sections and the (pigment agent b) 0.8 section. Red 208 The red constituent for color filters made into the 14.3 sections and the (pigment agent q) 0.8 section was created. The result of having measured the fluidity of this constituent and the gloss of a drawdown object is shown in Table 2.

[0052] A pigment agent (q) is not added in example of comparison 20 example 51, but it is Pigment. Red 208 The red constituent made into the 15.1 sections was created. The result of having measured the fluidity of this constituent and the gloss of a drawdown object is shown in Table 2.

[Table 2]

カラーフィルター用樹脂ワニスにおける粘度、光沢

	顔 料	顔料 分散剤	粘 度 cps			光沢 (%)
			6rpm	60rpm	6/60比	
比較例 18	C. I. ピグメントエロー83	—	5430	1064	5.10	75.2
実施例 49	“	[b]	113	112	1.01	99.6
比較例 19	C. I. ピグメントエロー139	—	3650	838	4.36	68.4
実施例 50	“	h	94	92	1.02	87.4
比較例 20	C. I. ピグメントレッド208	—	4270	886	4.82	71.8
実施例 51	“	[q]	108	107	1.01	96.0

[0053] The result that what blended the pigment agent by this invention also in the resin varnish for color filters as shown in Table 2 excelled in a fluidity and gloss was shown.

[0054] Offset ink, such as nitrocellulose lacquer, a printing melamine alkyd coating, a normal dry alkyd coating, urethane system plastic paint, acryl lacquer, amino acrylic resin baking finish, a polyamide / nitrocellulose ink, and various rosin modified resin, lime rosin ink, and vinyl-chloride-resin ink did not cause condensation, either, but the pigment which furthermore added the pigment agent in connection with this invention showed good dispersibility.

[0055]

[Effect of the Invention] To nonaqueous vehicles, such as ink and a coating, the pigment agent of this invention demonstrates a remarkable improvement effect in almost all azo system pigments, can prevent condensation of a pigment and it not only improves the fluidity of ink, a coating, etc. remarkably, but it can obtain the coat which has the gloss which was clear and was excellent. The pigment agent of this invention is very more useful still also practical from the ease of the preparation.

[Translation done.]

## \* NOTICES \*

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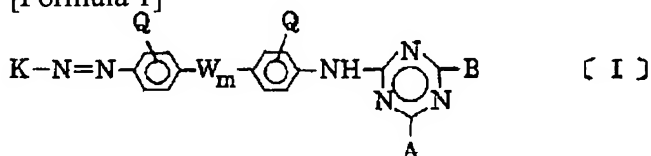
1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

## CLAIMS

[Claim(s)]

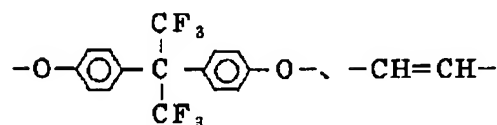
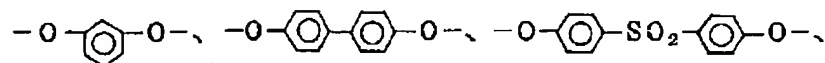
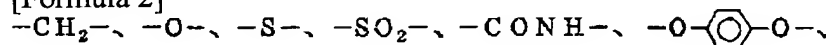
[Claim 1] The pigment agent which is the compound expressed with the following general formula [I] and [-izing 1], its metal salt, its ammonium, or an amine salt.

[Formula 1]



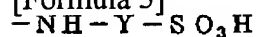
A hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, or a hydroxyl group is shown by the inside Q of [type. W shows either of the radicals shown by [-izing 2], and m shows the integer of 0 or 1.

[Formula 2]



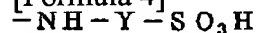
K shows the coupler component residue for azo system pigments. A and B show a hydroxyl group or the radical shown by [-izing 3].

[Formula 3]



\*\*\*\*\* of Y is also good at ethylene, a phenylene group, or a naphthylene radical including a \*\*\*\*\* substituent. However, A and B are independent respectively and at least one side is a radical shown by [-izing 4].

[Formula 4]



[Claim 2] The pigment agent according to claim 1 whose K which is the coupler component residue for azo system pigments is the coupler component residue of an acetoacetanilide system, a pyrazolone system, the Naphthol AS system, or a beta-naphthol system.

[Translation done.]